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Claims 1, 3, 8, 10, and 16 are amended. Claims 1, 8, 10, and 16 are amended to specify that each block of the block copolymer comprises at least five monomeric units. Support for this amendment is found throughout the specification, particularly at page 9, lines 1-4. Claim 3 has been amended to make the language consistent with amended Claim 1.

New Claims 30-35 have been added. Support for these new claims is found in Claims 1-3, 5-7, and 16, and throughout the specification, particularly at: page 9, lines 1-4.

Please replace claims 1, 3, 8, 10, 16, and 30-35 with the clean version provided above.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

Applicants respectfully request reconsideration of the application in view of the amendments and remarks made herein.

No new matter has been added.

Rejections under 35 U.S.C. §102

Claims 1-6, 8-14, 16-18, and 25 have been rejected under 35 U.S.C. §102(e) as being anticipated by Lizardi. The Office Action asserts that Lizardi describes a DNA tag in which groups of three amino acids together form the DNA tag, that each group of three amino acids is considered a block, and that the blocks together form a block copolymer. The Applicants note that Claim 4 was previously canceled and that they assume the Office meant to refer to groups of three nucleotides.

It is well established that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987), cert. denied, 481 U.S. 1052 (1987). See also, Scripps Clinic and Research Foundation v. Genentech, Inc., 18 USPQ 2d 1001 (Fed. Cir. 1991). Lizardi does not disclose each and every element of the claimed invention.

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As amended, the claims specify that each block of the molecular bar code is comprised of at least five monomeric units (e.g., Claims 5 and 8) or that each block is a homopolymer of at least five monomeric units (e.g., Claims 10, 16, and 30). The Office Action has asserted that each group of three nucleotides is considered a block. Therefore, Lizardi does not anticipate the claimed invention in which each block comprises at least five monomeric units, or in which each block is a homopolymer of at least five monomeric units.

Accordingly, the Applicants respectfully request withdrawal of this rejection of Claims 1-3, 5-6, 8-14, 16-18, and 25 under 35 U.S.C. §102(e).

Claims 1-6, 8-14, 16-18, and 25 have been rejected under 35 U.S.C. §102(b) as being anticipated by Oku et al. The Office Action asserts that the arguments applied above to Lizardi also apply to Oku et al. because Oku et al. discloses a DNA tag similar to that disclosed in Lizardi. The Applicants note that Claim 4 was previously canceled.

As amended, the claims specify that each block of the molecular bar code is comprised of at least five monomeric units (e.g., Claims 5 and 8) or that each block is a homopolymer of at least five monomeric units (e.g., Claims 10, 16, and 30). The Office Action has asserted that each group of three nucleotides in Oku et al. is considered a block. Therefore, Oku et al. does not anticipate the claimed invention in which each block comprises at least five monomeric units, or in which each block is a homopolymer of at least five monomeric units.

Accordingly, Oku et al. does not disclose each and every element of the claimed invention. As such, the Applicants respectfully request withdrawal of this rejection of Claims 1-3, 5-6, 8-14, 16-18, and 25 under 35 U.S.C. §102(b).

Claims 1-6, 8-14, 16-18, and 25 have been rejected under 35 U.S.C. §102(b) as being anticipated by Fields et al. The Office Action asserts that the arguments applied above to Lizardi also apply to Fields et al. because Fields et al. discloses a DNA tag similar to that disclosed in Lizardi. The Applicants note that Claim 4 was previously canceled.

As amended, the claims specify that each block of the molecular bar code is comprised of at least five monomeric units (e.g., Claims 5 and 8) or that each block is a homopolymer of at least five monomeric units (e.g., Claims 10, 16, and 30). The Office Action has asserted that each group of three nucleotides is considered a block. Therefore, Fields et al. does not anticipate the claimed invention in

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which each block comprises at least five monomeric units, or in which each block is a homopolymer of at least five monomeric units.

Accordingly, Fields et al. does not disclose each and every element of the claimed invention. As such, the Applicants respectfully request withdrawal of this rejection of Claims 1-3, 5-6, 8-14, 16-18, and 25 under 35 U.S.C. §102(b).

Rejection under 35 U.S.C. §103(a)

Claims 26-29 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Lizardi, Oku et al., or Fields et al. The Office has asserted that although Lizardi, Oku et al., or Fields et al. do not disclose different nucleic acid tags, it would have been obvious to use different nucleic acid tags, each for detecting a different analyte, in order to simultaneously detect different analytes in a kit.

The law is clear that to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. In re Fine, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 21 USPQ2d 1941 (Fed. Cir. 1992). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 231 USPQ 375 (Fed. Cir. 1986). Finally, the prior art reference, or references when combined, must teach or suggest all the claim limitations. In re Royka, 180 USPQ 580 (CCPA 1974). Lizardi, Oku et al., or Fields et al., either alone or in combination, do not teach or suggest all the claim limitations.

Claims 26-29 are directed to a kit for use in the detection of an analyte in a sample comprising a targeted molecular bar code according to Claim 1. As amended, Claim 1 specifies that each block of the molecular bar code is comprised of at least five monomeric units. As discussed above, Lizardi, Oku et al, and Fields et al., do not teach or suggest a molecular bar code in which each block is comprised of at least five monomeric units.

Accordingly, the Applicants respectfully request withdrawal of this rejection of Claims 26-29 under 35 U.S.C. §103(a).

Claims 7, 15, and 19 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Lizardi, Oku et al., or Fields et al. in view of Rothschild et al. The Office has asserted that Rothschild et al. describes photocleavable biotin conjugates for nucleic acid and proteins, and that in view of Lizardi, Oku et al., or Fields et al., it would have been obvious to use the photocleavable biotin to link an

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antibody and molecular bar code because the photocleavable biotin is easily and selectively cleaved with electromagnetic radiation.

As discussed above, Lizardi, Oku et al, and Fields et al., do not teach or suggest a molecular bar code in which each block is comprised of at least five monomeric units, or in which each block is a homopolymer of at least five monomeric units. Rothschild does nothing to cure this deficiency of Lizardi, Oku et al, and Fields et al., only describing photocleavable biotin conjugates.

Accordingly, the cited references do not teach or suggest all the claim limitations and this rejection of Claims 7, 15, and 19 under 35 U.S.C. §103(a) should be withdrawn.

Conclusion

Applicant submits that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at the number provided.

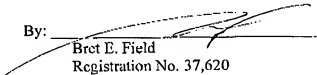
The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-0815, order number 06510118US1.

Respectfully submitted,
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Date:

1. 22. 02

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Claims 20-24 have been canceled.

Claims 1, 3, 8, 10, and 16 have been amended as follows.

1. (Twice Amended) A targeted molecular bar code comprising:
 - (a) a molecular bar code that is a block copolymer of a plurality of blocks selected from two or more different blocks, wherein each block comprises at least five monomeric units, and further wherein said molecular bar code is a charged polymer capable of generating a reproducible signal upon passage through a nanopore; and
 - (b) a member of a specific binding pair, wherein said specific binding pair member is joined directly or through a linking group to said molecular bar code.
3. (Amended) The targeted molecular bar code according to Claim 2, wherein said [negatively charged polymer is made up of] monomeric units [that] comprise a moiety selected from the group consisting of a phosphate group or a phosphorothioate group.
8. (Amended) A targeted molecular bar code comprising:
 - (a) a negatively charged block copolymer of from one to twenty blocks, wherein said blocks are selected from two or more different blocks, wherein each block consists of at least five monomeric units comprising a phosphate group; and
 - (b) a member of a specific binding pair, wherein said member of a specific binding pair is joined to said negatively charged block copolymer through a linking group.
10. (Amended) The targeted molecular bar code according to Claim 8, wherein each block is a homopolymer of at least five monomeric units selected from the group consisting of phosphates and sugar phosphates.

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16. (Amended) A targeted molecular bar code comprising:

(a) a negatively charged block copolymer of from two to twenty blocks, wherein said blocks are selected from a group of three different blocks, wherein each block is a homopolymer of at least five monomeric units selected from the group consisting of polyphosphates, oligonucleotides, oligodeoxyribosephosphates; and polyethylene glycol-phosphodiester;

(b) a member of a specific binding pair, wherein said member of a specific binding pair is joined to said negatively charged block copolymer through a linking group.

The following new Claims 30-35 have been added.

-- 30. (New) A targeted molecular bar code comprising:

(a) a molecular bar code that is a block copolymer of a plurality of blocks selected from two or more different blocks, wherein each block is a homopolymer comprising at least five monomeric units, and further wherein said molecular bar code is a charged polymer capable of generating a reproducible signal upon passage through a nanopore; and

(b) a member of a specific binding pair, wherein said specific binding pair member is joined directly or through a linking group to said molecular bar code.

31. (New) The targeted molecular bar code of Claim 30, wherein said charged polymer is negatively charged.

32. (New) The targeted molecular bar code according to Claim 31, wherein said monomeric units comprise a moiety selected from the group consisting of a phosphate group or a phosphorothioate group.

33. (New) The targeted molecular bar code according to Claim 30 wherein said block copolymer comprises three different blocks.

34. (New) The targeted molecular bar code according to Claim 30, wherein said molecular bar code comprises a linking group.

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35. (New) The targeted molecular bar code according to Claim 34, wherein said linking group is a photocleavable linking group. --